

## FORMER DISTRIBUTION OF PRAIRIES IN NORTHERN LOUISIANA

M.H. MacRoberts & B.R. MacRoberts

Bog Research, 740 Columbia, Shreveport, Louisiana 71104 U.S.A.

&

Herbarium, Museum of Life Sciences, Louisiana State University in Shreveport,  
Shreveport, Louisiana 71115 U.S.A.

### ABSTRACT

Using historical accounts, land survey records, maps, geological surveys, soil maps, and floristic surveys, we plotted the former distribution of prairies in north and central Louisiana. Prairies were scattered across the area, but most have disappeared due to anthropogenic causes.

KEY WORDS: prairie, Louisiana

### INTRODUCTION

Before Europeans reached the New World, forest was almost continuous from the Atlantic Ocean to east Texas. But within this forest were open communities such as bogs, prairies, and sandylands (DeSelm & Murdock 1993).

Rostlund (1957) used historical records to interpret the native vegetation of the southeastern United States. He was especially interested in prairies, notably extensive prairies and concentrations of them. In addition to confirming the existence of large prairies and localized concentrations, he found that there were numerous isolated prairies scattered throughout the southeast. Prairies were not rare, but rather were ubiquitous (Barden 1997). Most of these prairies "were small, only a few acres to a square mile in extent, but some of them were much larger" (Rostlund 1957:407).

Rostlund concentrated on the area between the Mississippi River and the Atlantic Ocean, and, apparently for lack of information, virtually ignored Louisiana and Arkansas (Irving *et al.* 1980; Foti 1989) as have most subsequent authors concerned with southeastern prairies (*e.g.*, DeSelm & Murdock 1993).

There are two recognized prairie types in Louisiana. The "coastal" or "Cajun" prairies of southwestern Louisiana (Newton 1972; Smeins *et al.* 1992; DeSelm & Murdock 1993) were once very extensive, consisting of between two and three million acres, but today they are almost gone and fewer than 200 acres remain (Allen & Vidrine 1989; Larry Allain, pers. comm.).

The calcareous or "isolated" prairies of central and northern Louisiana belong to the type Rostlund (1957) described farther east, and it is these with which we will be concerned. Floristically these prairies are classifiable as tallgrass prairies with such characteristic grasses as *Andropogon gerardii* Vitman, *Panicum virgatum* L., *Schizachyrium scoparium* (Michx.) Nash, *Sorghastrum nutans* (L.) Nash, and *Sporobolus asper* (Michx.) Kunth. Families especially well represented are the Apiaceae, Asteraceae, Fabaceae, Lamiaceae, Poaceae, Rosaceae, and Scrophulariaceae (Smith 1988; Smith *et al.* 1989; MacRoberts & MacRoberts 1995, 1996a, 1996b, 1997).

Using land surveys, geological surveys, historical records, maps, and recent botanical surveys, we attempt to reconstruct the former distribution of prairies in northern Louisiana.

## METHODS

We examined the accounts of explorers and surveyors (Bartram 1792; Featherman 1871; Freeman & Custis 1806 [Flores 1984]; Lockett 1876; LePage Du Pratz 1774; Dunbar & Hunter 1804 [McDermott 1963; Rowland 1930]), studied the earliest (1820-1850) land survey records, aerial photographs, and maps (Darby 1816; Hardee 1895; Lockett 1872, 1884; Tanner 1839), geological and soil surveys (Anderson 1993; Chawner 1936; Fisk 1938, 1940; Harris & Veatch 1899a, 1899b; Hilgard 1869; Huner 1939; Kerr *et al.* 1925; Smies *et al.* 1918; Lurch 1893), and published and unpublished botanical and ecological descriptions of north and central Louisiana (Brown n.d., 1941a, 1941b, 1953; Delcourt 1976; Thomas 1986; Smith *et al.* 1989; Hart & Lester 1993; Norman 1991; Louisiana Natural Heritage Program records, MacRoberts & MacRoberts 1995, 1996a, 1996b, 1997; MacRoberts *et al.* 1997; Martin & Smith 1991; Teague & Wendt 1994). Especially important were the field notes of C.A. Brown, who studied Louisiana prairies in the 1930's and 1940's and who left numerous records now housed in the LSU herbarium and the LSU Archives, Hill Memorial Library.

By north and central Louisiana is meant all parishes north of base line T1N, which runs through Vernon, Rapides, Avoyelles, and Concordia parishes.

The determination of what constitutes a prairie in the historical records is never certain. However, comparing current occurrences with what land surveyors and explorers said about them indicates that early explorers and surveyors were distinguishing prairies on basically the same characteristics we use today: an open, naturally treeless area with a rich herbaceous layer dominated by grasses, composites, and legumes. The soil is calcareous clays with a high pH. Lockett (1872 [1969:71]) captures the essence of this in his brief description of Prairie du Cote near Columbia:

"The prairie is almost exactly circular in shape and about one mile in diameter; its soil is a light, yellow loam. Its surface is gently undulating, covered with a luxuriant growth of grass and thousands of bright wild flowers, and is free from trees except for a few clumps of thick-growing hawthorns."

Any survey of the sort we have attempted will miss many prairies. If a prairie was small, explorers did not comment on it. If it did not fall on a survey line, land surveyors did not mark it, and some surveyors did not record prairies at all. If European settlement had already occurred, prairies often were converted quickly to fields or pasture and were marked as such by surveyors. Thus, the mesh of our survey is large, and our results are influenced by it.

But our purpose is not to pin down the exact location of every prairie in north and central Louisiana — the sources do not always agree on prairie location or size. Instead, we aim simply to show the basic distribution of Louisiana prairies: for those wishing more detailed information about specific sites, the original sources should be consulted.

## RESULTS

Figure 1 shows the nineteenth century distribution of prairies in Louisiana. While we are concentrating on the northern prairies, we have, for the sake of completeness, indicated the approximate distribution of the Cajun prairies (based on current information provided by the National Wetlands Research Center; see also Smeins *et al.* 1992; DeSelm & Murdock 1993; Newton 1972) as well as the location of two isolated prairies that fall below T1N: Bayou Rouge Prairie in Avoyelles Parish, and Buhler's Prairie in East Baton Rouge Parish (see also Newton 1972).

North of T1N, many prairies appear to have been truly isolated; whereas others consisted of several closely related or adjoining sites. For example, just east of Bellevue, Bossier Parish, there was a cluster of three or four prairies, each about one half to one square mile in extent. Another cluster occurred near Calvin, Winn Parish, where today there is a belt of about 45 prairies, many of which are now disjunct remnants of once larger connected openings (Smith *et al.* 1989).

In the nineteenth century, prairies in north and central Louisiana ranged in size from only a few acres to five or so square miles. Some of the largest prairies are given in Table 1. The size estimate must be approximate given the often conflicting historical accounts.

While it never will be possible to give a precise figure for the number of acres of isolated prairie in northern Louisiana in former times, on the basis of our research we can certainly say that at the beginning of the last century there were not fewer than 30,000 acres and probably closer to 40,000 or 50,000 acres.

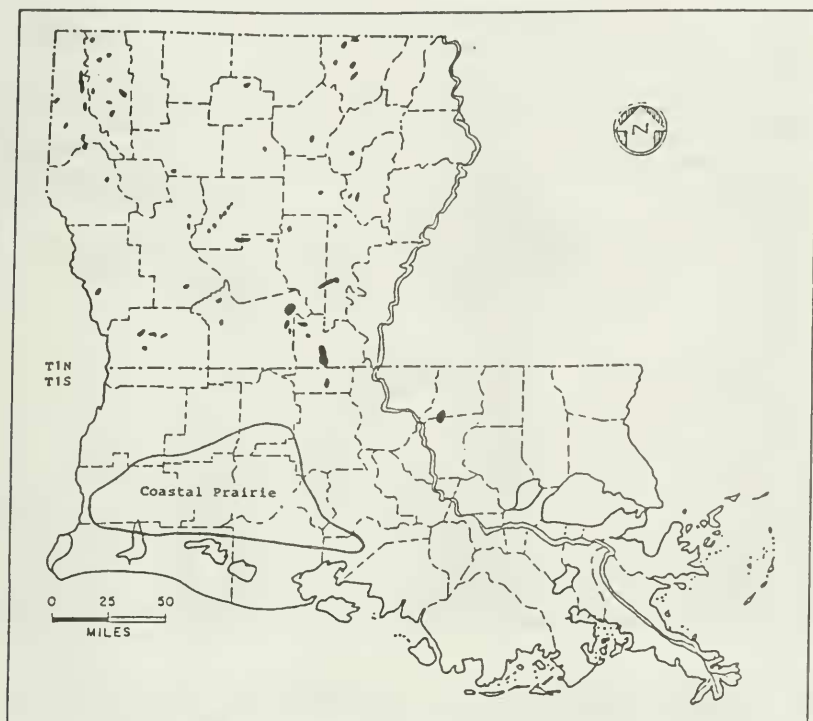


Figure 1. Native distribution of Louisiana prairies with special emphasis on north of baseline T1N.

Table 1. Some of the largest prairies (and groups of prairies) in northern Louisiana in former times.

Prairie Name	Parish	Size (approximate)
Anacoco	Vernon	1000 acres
Avoyelles	Avoyelles	Several square miles
Bartram's	Grant	1300 acres
Bellevue	Bossier	1600 acres
Boeuf	Franklin	Several square miles
Burned	Franklin	1000 acres
Caddo	Caddo	3200 acres
Catahoula	LaSalle	3200 acres
Clear Lake	Natchitoches	300 acres
duBois	Ouachita	1000 acres
duCote	Caldwell	600 acres
Holloway	Rapides	Several square miles
Jefferson	Morehouse	Several square miles
Keiffer	Winn	500 acres
Mer Rouge	Morehouse	1900 acres
Pendarvis	LaSalle	600 acres
Seymore	Morehouse	800 acres
Tanock's	Winn/Grant	700 acres

Correlating prairie distribution with geological substrate indicates that prairies occur on several formations. Some occur on recent Pleistocene floodplain terraces, notably along the Red River; whereas others are found on Tertiary deposits, including Fleming, Jackson, and Cook Mountain (Smith 1988). All soils are alkaline (pH 7.5-8.0) stiff clays high in calcium (3500-8000 ppm) with high shrink-swell characteristics. Soils often contain marine shells and limestone nodules (Smith 1988; Smith *et al.* 1989; MacRoberts & MacRoberts 1995). Brown (1953) pointed out that the soils in the majority of the prairies he visited contained shells and an unusually compact layer 6 to 36 inches below the surface.

## DISCUSSION

We find the main features of the isolated or calcareous prairies in north Louisiana to be essentially the same as those described by Rostlund (1957) for the southeastern United States. In north Louisiana, as in the remainder of the southeast, there were both local concentrations of prairies and isolated prairies. As the early observers, for example, Lockett (1876), recognized there is a band of "Hog Wallow Land" from Vernon Parish to central Louisiana and northward to Arkansas along which occurred numerous prairies, sometimes in groups, sometimes in isolation. Another major

concentration of prairies occurred in northwestern Louisiana in Caddo and Bossier parishes.

Some prairies were quite large, others were very small, and it is undoubtedly the case that our records of the larger are more complete than for the smaller. Explorers were more likely to mention the largest prairies, and land surveys missed many of the smaller sites. Thus, prairies in the size class of fewer than forty acres have tended to fall through the cracks while those over a square mile are recorded repeatedly by explorers and land surveyors.

In pre-European times, Louisiana had about two and a half million acres of prairie, most of which was confined to the southern part of the state (Table 2).

Table 2. Pre-European and present day prairie in Louisiana and surrounding areas.

State	Acres		Loss (%)
	Pre-European	Today	
ARKANSAS	1,000,000	3600	99.64
LOUISIANA			
Northern	40,000	300	99.00
Coastal	2,500,00	150	99.99
MISSISSIPPI	?	?	?
TEXAS			
Blackland	12,000,000	5000	99.95
Coastal	7,000,000	?	99.00

The loss of prairie in Louisiana and throughout the south is comparable to the loss of prairie in the Midwest where less than 1% --- in most areas usually no more than 0.01% --- remains (Whitney 1994; Noss 1997). There are no estimates for Mississippi, which had extensive prairies in pre-European times and which today has a few, fine remnants. By the time the land surveys were made in the 1820's and 1830's, European settlement was heavy, and most prairies were already under cultivation (Ken Gordon, pers. comm.). However, on the Bienville National Forest in the Jackson Prairie Belt of central Mississippi, about 800 acres of prairie remain in 54 sites that range in size from fewer than one to 160 acres (Gordon & Wiseman 1989; Moran *et al.* 1997).

For Louisiana the story is the same. Almost all prairies were in cultivation, pasture, grazing, forestry, or urban development by the twentieth century.

In Arkansas, the pace of prairie loss was slower but the result the same. It was not until early in this century that the Grand Prairie began to be extensively cultivated, but today, only very small fragments of it remain (Irving *et al.* 1980).

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